

**CLAIMS****WHAT IS CLAIMED IS:**

- 1        1. A network system for facilitating access to functionality available on  
2 one or more networks, comprising:
  - 3                one or more terminals operable in a network;
  - 4                a network infrastructure comprising one or more network systems;
  - 5                at least one network-enabled application operating within a service  
6 provision infrastructure for use by one or more of the terminals; and
  - 7                at least one network service broker comprising a loosely-coupled  
8 interface exposed to the service provision infrastructure for brokering added-value  
9 network services from one or more of the terminals and network systems to the  
10 service provision infrastructure.
- 1        2. The network system as in Claim 1, wherein the loosely-coupled  
2 interface is a loosely-coupled standardized interface.
- 1        3. The network system as in Claim 2, wherein the loosely-coupled  
2 standardized interface is defined in Extensible Markup Language (XML).
- 1        4. The network system as in Claim 1, wherein the loosely-coupled  
2 interface comprises a Web Services interface.
- 1        5. The network system as in Claim 1, wherein the loosely-coupled  
2 interface comprises a single loosely-coupled Web Service interface exposed to the  
3 service provision infrastructure.
- 1        6. The network system as in Claim 1, wherein the network service broker  
2 comprises at least one network-coupled broker to communicate with one or more  
3 network elements in the network infrastructure.

1        7. The network system as in Claim 1, wherein the network service broker  
2 comprises at least one terminal-coupled broker to communicate with one or more  
3 terminals.

1        8. The network system as in Claim 1, wherein the network service broker  
2 comprises at least one hybrid network service broker to communicate with one or  
3 more network elements in the network infrastructure and with one or more terminals.

1        9. The network system as in Claim 1, wherein the network service broker  
2 is an authentication broker to access authentication services for use by the network-  
3 enabled application.

1        10. The network system as in Claim 1, wherein the network service broker  
2 is a charging broker to access a charging/billing service in connection with use of the  
3 network-enabled application.

1        11. The network system as in Claim 1, wherein the network service broker  
2 is a location broker to access a terminal location service to allow a location of the  
3 terminal to be provided to the network-enabled application.

1        12. The network system as in Claim 1, wherein the network service broker  
2 is a content ordering broker to store subscription information to a profile register and  
3 to verify subscription intentions of an end-user of the terminal.

1        13. The network system as in Claim 1, wherein the network service broker  
2 is a presence broker to access a presence service to allow user presence  
3 information to be provided to the network-enabled application.

1        14. The network system as in Claim 1, wherein the network service broker  
2 is a client provisioning broker to broker provisioning of mobile terminals.

1        15. The network system as in Claim 1, wherein the network service broker  
2 is a notification broker to facilitate pushing content to the terminals.

1        16. The network system as in Claim 1, wherein the network service broker  
2 is a privacy broker to access end-user privacy information and to control which  
3 information other brokers will provide to the service provision infrastructure.

1        17. The network system as in Claim 16, wherein the privacy broker  
2 controls which information other brokers will provide to the service provision  
3 infrastructure based on parameters defined by an end-user of the terminal, wherein  
4 the parameters may be provided by the end-user manually at a time in which the  
5 end-user privacy information is required, or automatically where the parameters  
6 were defined by the end-user in advance.

1        18. A method of providing network applications access to service  
2 functionality available via one or more networks, comprising:  
3                providing at least one network service broker logically between one or  
4 more network infrastructures and a service provision infrastructure operating on top  
5 of the network infrastructures;  
6                exposing a loosely-coupled interface of the network service broker to  
7 the service provision infrastructure; and  
8                facilitating access by the network applications to value-added services  
9 within the network infrastructures via the loosely-coupled network service broker  
10 interface.

1        19. The method of Claim 18, wherein facilitating access via the loosely-  
2 coupled network service broker interface comprises making the service available to  
3 the applications via the loosely-coupled network service broker interface using any  
4 of a plurality of service provision infrastructure technologies.

1        20. The method of Claim 18, further comprising communicating between  
2 the network service broker and the network infrastructure regardless of

3 technological differences in one or more different network elements operating within  
4 the network infrastructure.

1 21. The method of Claim 18, further comprising communicating between  
2 the network service broker and the network infrastructure regardless of  
3 technological differences in one or more network infrastructure network systems  
4 having different access methods.

1 22. The method of Claim 18, wherein the one or more network  
2 infrastructures collectively implement a plurality of different network technologies,  
3 and wherein the network service broker accommodates technological variations  
4 between the network technologies and service provision infrastructure technologies.

1 23. The method of Claim 18, wherein exposing a loosely-coupled interface  
2 of the network service broker to the service provision infrastructure comprises  
3 exposing a loosely-coupled Web Services interface to the service provision  
4 infrastructure.

1 24. The method of Claim 18, further comprising defining the loosely-  
2 coupled interface in Extensible Markup Language (XML).

1 25. The method of Claim 18, wherein providing at least one network  
2 service broker comprises providing a plurality of network service brokers, and  
3 wherein each of the plurality of network service brokers comprises a loosely-coupled  
4 interface exposed to the service provision infrastructure for communication  
5 therebetween.

1 26. The method of Claim 25, wherein at least some of the plurality of  
2 network service brokers intercommunicate.

1 27. The method of Claim 18, wherein the network infrastructures comprise  
2 at least one fixed network.

1        28. The method of Claim 18, wherein the network infrastructures comprise  
2 at least one wireless network.

1        29. The method of Claim 18, further comprising utilizing the value-added  
2 service by the applications as arranged by the network service broker.

1        30. A method of providing network applications access to service  
2 functionality available via one or more networks, comprising:  
3                providing at least one network service broker logically between one or  
4 more terminals and a service provision infrastructure operating on top of a network  
5 infrastructure;

6                exposing a loosely-coupled interface of the network service broker to  
7 the service provision infrastructure; and  
8                facilitating access by the network applications to value-added services  
9 provided at least in part by the terminals via the loosely-coupled network service  
10 broker interface.

1        31. The method as in Claim 30, further comprising communicating a  
2 terminal type of one or more of the terminals to the network service broker, and  
3 providing the terminal type to the service provision infrastructure via the loosely-  
4 coupled interface of the network service broker.

1        32. The method as in Claim 30, further comprising configuring one or more  
2 user terminals via cooperative communication between the user terminals and the  
3 network service broker at the direction of the network application, wherein the  
4 configuration is accomplished regardless of the protocol utilized by the user  
5 terminals.

1        33. A method of providing network applications access to service  
2 functionality available via one or more networks, comprising:  
3                providing at least one hybrid network service broker logically between  
4 one or more network infrastructures and a service provision infrastructure operating

5 on top of the network infrastructures, and between one or more terminals and the  
6 service provision infrastructure;

7 exposing a loosely-coupled interface of the hybrid network service  
8 broker to the service provision infrastructure; and

9 facilitating access by the network applications via the loosely-coupled  
10 hybrid network service broker interface to value-added services provided via one or  
11 both of the terminals and the network infrastructures.

1 34. A method of providing network applications that operate within a  
2 service provision infrastructure access to service functionality available via a visited  
3 network in which a user of a terminal has roamed, comprising:

4 providing a use authorization voucher to a visited network service  
5 broker associated with the visited network;

6 receiving, at the service provision infrastructure, an address of the  
7 visited network service broker from a home network service broker associated with a  
8 home network, wherein the home network service broker exposes a loosely-coupled  
9 interface to the service provision infrastructure to facilitate communication  
10 therebetween;

11 accessing the visited network service broker by the service provision  
12 infrastructure using the address of the visited network service broker; and

13 facilitating access by the service provision infrastructure to the service  
14 functionality available from the visited network via a loosely-coupled interface of the  
15 visited network service broker that is exposed to the service provision infrastructure.

1 35. The method as in Claim 34, wherein providing the use voucher to the  
2 visited network service broker comprises providing the use voucher to the service  
3 provision infrastructure via the loosely-coupled interface of the home network  
4 service broker, and in turn providing the use voucher to the visited network service  
5 broker via the loosely-coupled interface of the visited network service broker.

1       36. The method as in Claim 34, wherein providing the use voucher to the  
2 visited network service broker comprises directly providing the use voucher from the  
3 home network service broker to the visited network service broker.

1       37. The method as in Claim 34, wherein providing a use authorization  
2 voucher to the visited network service broker comprises providing the use  
3 authorization voucher to the visited network if a roaming agreement between the  
4 home and visited networks authorizes providing the use authorization voucher to the  
5 visited network.

1       38. A method of providing network applications that operate within a  
2 service provision infrastructure access to service functionality available via a visited  
3 network in which a user of a terminal has roamed, wherein a roaming agreement  
4 has been established between the visited network and a home network of the user  
5 of the terminal, the method comprising:

6               communicating between the service provision infrastructure and a  
7 home network service broker associated with the home network via a loosely-  
8 coupled interface of the home network service broker exposed to the service  
9 provision infrastructure; and

10               communicating between the home network service broker and a  
11 visited network service broker associated with the visited network, wherein the home  
12 network service broker serves as a proxy in accessing the service functionality  
13 available via the visited network.

1       39. A method of providing network applications that operate within a  
2 service provision infrastructure access to service functionality available via a visited  
3 network in which a user of a terminal has roamed, wherein a roaming agreement  
4 has been established between the visited network and the service provision  
5 infrastructure, the method comprising:

6 providing a visited network service broker logically between the visited  
7 network and the service provision infrastructure operating on top of a network  
8 infrastructure;

9 exposing a loosely-coupled interface of the visited network service  
10 broker to the service provision infrastructure; and

11 facilitating access by the service provision infrastructure to the service  
12 functionality available from the visited network via the loosely-coupled interface of  
13 the visited network service broker.

1 40. A network service broker for facilitating access by a service provision  
2 infrastructure to service functionality available via one or more networks, the network  
3 service broker comprising:

4 an interface to access the service functionality from a network  
5 infrastructure; and

6 a loosely-coupled interface exposed to the service provision  
7 infrastructure, wherein the loosely-coupled interface comprises a Web Services-  
8 based interface having Extensible Markup Language (XML) schemata built on top of  
9 a Web Services platform to expose the service functionality available via the  
10 network.